Paper No. 18

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

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Ex parte DANIEL D. SILVA, ROLF WALTER BERTEIG,
DONALD LEE BRITTAIN, THOMAS DENE HUDSON, and GARY S. YOST

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Appeal No. 2002-1313
Application No. 09/282,590

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ON BRIEF

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Before KRASS, DIXON, and BARRY, *Administrative Patent Judges*.

BARRY, *Administrative Patent Judge*.

DECISION ON APPEAL

A patent examiner rejected claims 1-20. The appellants appeal therefrom under

35 U.S.C. § 134(a). We reverse.

BACKGROUND

The appellants' invention concerns three-dimensional ("3D") modeling. 3D

modeling allows a user to generate models of 3D objects using a computer.

Heretofore, a user defined a simple 3D object and then applied modifications (e.g.,

stretching, bending) thereto. (Spec. at 2.) To apply a modification, a dialog box

prompted the user to fill-in values of the modification. He then applied the modification

to the object, which changed the appearance of the object on the computer's display,

and viewed the results. (*Id.*) The appellants assert that with conventional modeling,

however, a user did not have a clear idea of how a specific modification would affect an

object until he applied the modification thereto. (*Id.*)

In contrast, the appellants represent a 3D object by an initial definition and a set

of modifiers. Each modifier modifies some portion of the definition and may change the

appearance of the object when applied thereto. A wireframe is used to depict modifiers

that cause an object to assume the approximate shape of the modifiers when applied

thereto. (Appeal Br. at 4.) Such a representation allows a user to see how an object

will look when the modifiers are applied thereto before the modifiers are so

applied. (*Id.*) The modifiers are ordered as a stack so that the output of each modifier

is fed into the next modifier. When the last modifier is applied to the object, the object

takes on its final shape. (Spec. at 2.)

A further understanding of the invention can be achieved by reading the following

claim:

> 1. A method of modifying the representation of an object in a three
> dimensional modeling system comprising:
>
> displaying a first three dimensional representation of said object;

displaying a three dimensional representation of a modifier to be applied to said object for altering a shape of said object in association with the representation of the object, the representation of the modifier having a shape defined by one or more modifier parameters that are associated with the modifier, and the representation of the modifier having a shape indicating an approximate resulting shape of the object when the modifier is applied to the object;

receiving a selection corresponding to a change to one of the modifier parameters;

re-displaying said three dimensional representation of said modifier based on the changed modifier parameters;

applying said modifier to said object; and

generating and displaying a second three dimensional representation of said object from said object and said modifier, wherein said second three dimensional representation of said object is deformed with respect to said first three dimensional representation.

Claims 1, 2, 4-10, 16, and 18-20 stand rejected under 35 U.S.C. § 102(e) as anticipated by U.S. Patent No. 5,583,977 ("Seidl"). Claims 3, 11-15, and 17 stand rejected under 35 U.S.C. § 103(a) as obvious over Seidl in view of Lau-Kee et al., *VPL: An Active, Declarative Visual Programming System*, Proceedings of IEEE Workshop on Visual Languages, Oct. 1991 ("Lau-Kee").

OPINION

Rather than reiterate the positions of the examiner or appellants *in toto*, we

address the main point of contention therebetween. The examiner makes the following

assertions.

> Seidl discloses a method of modifying representations of three
> dimensional objects comprising the steps of displaying a three
> dimensional representation of an object (curve in figures 12-19, surface in
> figures 20-27 and shape in figures 28-33), displaying a three dimensional
> representation of a modifier in association with the representation of the
> object, the representation of the object having a shape defined by one or
> more modifier parameters, (box in figures 12-33), the representation of
> the modifier having a shape indicating an approximate appearance of the
> object (figures 2425), changing the three dimensional representation of
> the modifier and applying the modifier to the object (column 2, lines 55-
> 61), and displaying a second three dimensional representation of the
> object (the modified curves in figures 13-19, modified surfaces in figures
> 21-27, and modified shape in figure 33).

(Examiner's Answer at 3.) The appellants argue, "in Seidl, the alterations are made by

a user interacting with an alteration tool (the bounding box). In [the claims], the

alteration is made by applying a modifier to an object. . . ." (Appeal Br. at 10.)

"Analysis begins with a key legal question -- *what* is the invention *claimed*?"

Panduit Corp. v. Dennison Mfg. Co., 810 F.2d 1561, 1567, 1 USPQ2d 1593, 1597 (Fed.

Cir. 1987).   In answering the question, "the Board must give claims their broadest

reasonable construction. . . ." *In re Hyatt*, 211 F.3d 1367, 1372, 54 USPQ2d 1664,

1668 (Fed. Cir. 2000). "Moreover, limitations are not to be read into the claims from the

specification." *In re Van Geuns*, 988 F.2d 1181, 1184, 26 USPQ2d 1057, 1059 (Fed.

Cir. 1993) (citing *In re Zletz*, 893 F.2d 319, 321, 13 USPQ2d 1320, 1322 (Fed. Cir.

1989)).

Here, independent claim 1 specifies in pertinent part the following limitations:

"displaying a three dimensional representation of a modifier to be applied to said object

for altering a shape of said object in association with the representation of the object. . .

applying said modifier to said object; and generating and displaying a second three

dimensional representation of said object from said object and said modifier. . . .”

Similarly, independent claim 2 specifies in pertinent part the following limitations:

"defining, by information stored in a storage device, one or more modifiers that may be

applied to the object to thereby change a shape of the object, . . . displaying the

modifiers by displaying a wireframe in association with the representation of the object,

the wireframe having a shape defined by one or more modifier parameters that are

associated with the modifier, and the wireframe's shape indicating an approximate

resulting shape of the object when the modifier is applied to the object; applying the

modifiers to the object; and generating and displaying a second visual representation of

the object based on the object and the one of the modifiers. . . .”

Also similarly, independent claim 10 specifies in pertinent part the following

limitations: “defining, by information stored in a storage device, one or more modifiers

that may be applied to the object to thereby change a shape of the object, . . .

displaying a three dimensional wireframe in association with the representation of the

object, the wireframe having a shape defined by one or more modifier parameters that

are associated with the modifier, and the wireframe's shape indicating an approximate

resulting shape of the object when the modifier is applied to the object; generating and

storing a derived object based on the object and the modifiers; and generating and

storing a derived object representation based on the derived object; and generating and

displaying a second visual representation of the object based on the derived object

representation. . . ." Further similarly, independent claim 16 specifies in pertinent part

the following limitations: "creating and storing information in a storage device that

defines one or more modifiers that may be applied to the object to change a shape of

the object, wherein each modifier comprises a modifier type value and one or more

modifier parameter values; . . . displaying a wireframe in association with the

representation of the object, the wireframe having a shape defined by one or more

modifier parameters that are associated with the modifier, the wireframe's shape

indicating an approximate resulting shape of the object when the modifier is applied to

the object; applying the modifiers to the object; and generating and displaying a second

visual representation of the object based on the object and the one of the modifiers. . .

." Giving the independent claims their broadest, reasonable construction, the limitations

require displaying a 3D representation of a modifier and changing the appearance of a

3D object by merely applying the modifier thereto.

"[H]aving ascertained exactly what subject matter is being claimed, the next

inquiry must be into whether such subject matter is novel." *In re Wilder*, 429 F2d 447,

450, 166 USPQ 545, 548 (CCPA 1970). "[A]nticipation is a question of fact." *Hyatt*,

211 F.3d at 1371, 54 USPQ2d at 1667 (citing *Bischoff v. Wethered*, 76 U.S. (9 Wall.)

812, 814-15 (1869); *In re Schreiber*, 128 F.3d 1473, 1477, 44 USPQ2d 1429, 1431

(Fed. Cir. 1997). "A claim is anticipated only if each and every element as set forth in

the claim is found, either expressly or inherently described, in a single prior art

reference." *Verdegaal Bros., Inc. v. Union Oil Co.*, 814 F.2d 628, 631, 2 USPQ2d 1051,

1053 (Fed. Cir. 1987) (citing *Structural Rubber Prods. Co. v. Park Rubber Co.*, 749 F.2d

707, 715, 223 USPQ 1264, 1270 (Fed. Cir. 1984); *Connell v. Sears, Roebuck & Co.*,

722 F.2d 1542, 1548, 220 USPQ 193, 198 (Fed. Cir. 1983); *Kalman v. Kimberly-Clark

Corp.*, 713 F.2d760, 771, 218 USPQ 781, 789 (Fed. Cir. 1983)). "[A]bsence from the

reference of any claimed element negates anticipation." *Kloster Speedsteel AB v.

Crucible, Inc.,* 793 F.2d 1565, 1571, 230 USPQ 81, 84 (Fed. Cir. 1986).

Here, the examiner equates the claimed 3D representation of a modifier to

Seidl's bounding box, which is applied to an object by selecting the object. Specifically,

"when a 3D object displayed on a visual display of a computer system is selected by a user, a 3D 'virtual box' or 'bounding box' appearing on the visual display such that the bounding box is proximal to the 3D object." Col. 6, ll. 1-5. He fails to show, however, that the appearance of the reference's 3D object is not changed, however, by merely applying the bounding box thereto. To the contrary, further interaction with the bounding box is required. For example, "[t]o scale the 3D object, the user grabs a corner of the bounding box and pulls." Col. 7, ll. 52-53. In summary, "[t]he bounding box 303 is [merely] a visual clue to the user that the 3D object has been selected." Col. 6, ll. 36-38. The absence of such a showing negates anticipation. Therefore, we reverse the anticipation rejection of claim 1; of claim 2 and claims 4-9, which fall therewith; of claim 10; and of claim 16 and claims 18-20, which fall therewith.

"In rejecting claims under 35 U.S.C. Section 103, the examiner bears the initial burden of presenting a *prima facie* case of obviousness." *In re Rijckaert*, 9 F.3d 1531, 1532, 28 USPQ2d 1955, 1956 (Fed. Cir. 1993) (citing *In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992)). "'A *prima facie* case of obviousness is established when the teachings from the prior art itself would appear to have suggested the claimed subject matter to a person of ordinary skill in the art.'" *In re Bell*, 991 F.2d 781, 783, 26 USPQ2d 1529, 1531 (Fed. Cir. 1993) (quoting *In re Rinehart*, 531 F.2d 1048, 1051, 189 USPQ 143, 147 (CCPA 1976)).

Here, the examiner fails to allege, let alone show, that the addition of Lau-Kee cures the deficiency of Seidl. Absent a teaching or suggestion of changing the appearance of a 3D object by merely applying a modifier thereto, the examiner fails to present a *prima facie* case of obviousness. Therefore, we reverse the obviousness rejections of claims 3, 11-15, and 17.

CONCLUSION

In summary, the rejection of claims 1, 2, 4-10, 16, and 18-20 under § 102(e) and the rejection of claims 3, 11-15, and 17 under § 103(a) are reversed.

REVERSED

ERROL A. KRASS   )
Administrative Patent Judge   )
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) BOARD OF PATENT
JOSEPH L. DIXON   )   APPEALS
Administrative Patent Judge   )   AND
) INTERFERENCES
)
)
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LANCE LEONARD BARRY   )
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